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THE ACHIEVEMENT MOTIVATION DEVELOPMENT PROJECT, A SUMMARY AND REVIEW.

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THE GOALS OF THIS PROJECT ARE--(1) THE IDENTIFICATION OF KEY VARIABLES IN AROUSING MOTIVATION, AND (2) THE DEVELOPMENT OF CURRICULA WHICH INCREASE ACHIEVEMENT MOTIVATION. THE DEVELOPMENT OF NEED ACHIEVEMENT (N=ACH) THEORY AND RESEARCH IN THIS AREA ARE DISCUSSED. METHODS OF MEASURING MOTIVATION ARE DESCRIBED. PROPOSITIONS BASIC TO THE STUDY ARE--(1) GOAL SETTING, (2) MOTIVE SYNDROME, (3) COGNITIVE SUPPORTS, AND (4) GROUP SUPPORTS. THE HYPOTHESIZED VARIABLES RELATED TO THESE PROPOSITIONS ARE BEING SYSTEMATICALLY ADDED AND SUBTRACTED IN A SERIES OF MOTIVE AROUSAL COURSES FOR ADOLESCENTS. STUDENTS WITH HIGH ACHIEVEMENT MOTIVATION MAY FIND THEMSELVES OPERATING CONTRARY TO SCHOOL GOALS. THIS RESULTS IN NEGATIVE SELF-IMAGE FORMATION AND A DISTASTE FOR SCHOOL. THE MOTIVE AROUSAL COURSE HELPS THE STUDENT WITH HIGH ACHIEVEMENT MOTIVATION. VARIOUS MOTIVE AROUSAL COURSES AND THEIR RESULTS ARE PRESENTED. A COGNITIVE LEARNING APPROACH AND AN EXPERIENCE-BASED APPROACH ARE COMPARED. A MOTIVE ACQUISITION COURSE IS OUTLINED. APPROPRIATE CASE STUDIES, TEXT MATERIALS, GAMES, AND EXERCISES HAVE BEEN DEVELOPED INTO AN INSTRUMENTED CURRICULUM WHICH WILL BE AVAILABLE FOR CLASSROOM USE. IMPLICATIONS FOR PSYCHOLOGICAL EDUCATION ARE DISCUSSED. COPIES MAY BE OBTAINED FROM THE CENTER FOR RESEARCH AND DEVELOPMENT ON EDUCATIONAL DIFFERENCES, PUBLICATIONS OFFICE, LONGFELLOW HALL, APPIAN WAY, CAMBRIDGE, MASSACHUSETTS 02138. (PS)

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The Achievement Motivation Development Project:

a summary and review

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April, 1967

Ways of increasing motivation in adolescents are being explored in a Harvard Graduate School of Education project under the supervision of Dr. David C. McClelland and the direction of Dr. Alfred Alschuler. A better understanding of the nature and origins of achievement motivation has been the central concern of Professor McClelland's research since 1947. His preoccupation began as a general interest in the topic of human motivation and a desire to discover a method of objectively measuring the strength of individuals' motives. His laboratory research on motivation and techniques for quantifying its presence soon led to a focus on achievement motivation, and later to studies of the role of "need for achievement" (n-Ach) in economic development. This research is summarized in Professor McClelland's book, The Achieving Society. In the last five years, McClelland's research focus has shifted from the exploration of the social origins and molar economic consequences of achievement motivation to the study of how the motivation of individuals can be increased. In the United States, Mexico, Spain, and India, businessmen have been given motive arousal courses which attempt to raise their achievement motivation. Results of these courses show that the businessmen have become significantly more energetic, resourceful, and successful following the courses (McClelland, 1965; Lasker, 1966). Having shown that achievement motivation can be aroused through relatively short instructional courses, McClelland and Alschuler now are attempting to discover which methods, or combination of methods, are most effective in increasing motivation.

In the autumn of 1965, under the sponsorship of the Research and Development Center, the researchers began a five-year systematic study of motive acquisition in adolescents. As part of this research, n-Ach courses are being given to high school students. Each course is given differently in order to find out which methods of motive arousal are most effective.

The decision to conduct this research in high schools was made for several reasons. First, having shown that motivation can be increased in adults, it is a natural step to see whether lasting changes in the motivation of adolescents can be induced. Second, the schools provide a context and means through which motive arousal courses can be given to a large number of students in the future. Last, and perhaps most important, while schools emphasize the acquisition of knowledge and skills, they tend to neglect the problem of developing motivation to use those skills and knowledge energetically. Thus the Achievement Motivation Development Project has two simultaneous goals: identification of the key variables in arousing motivation in general; and, on the practical side, development of high school curricula which increase achievement motivation.

BACKGROUND AND PREVIOUS RESEARCH

In retrospect, it is not difficult to understand how an interest in human motivation led to an interest in achievement motivation and how this research moved from the laboratory into the field. Through the 1940's learning theorists were concerned with the experimental study of motivation, primarily in animals. On the other hand, psychoanalytically oriented psychologists and psychiatrists, who were interested in human motivation, based their conclusions on clinical rather than on experimental evidence. The rigorously experimental study of human motivation had not developed, largely because there were no satisfactory objective measures of significant human motives. McClelland's first goal was "to develop a method of measuring individual differences in human motivation (which would be) firmly based on the methodology of experimental psychology and on the psychological insights of Freud and his followers." (McClelland, 1961, p.39)

According to Freud, motivation is evident in the fantasy lives of individuals. Dream interpretation is one principal method psychoanalysts use to discover a person's motivations, hidden conflicts, and wishes. Professor Henry Murray's Thematic Apperception Test (TAT) is a second, widely used method of eliciting fantasies of individuals which reveal motivations. Both of these clinical approaches lacked a rigorous quantitative method of determining the strength and extent to which motives were operating in a person's life. Here McClelland integrated the Hullian experimental perspective with the Freudian view. Consistent with the Hullian notion, the attempt was made to objectively quantify human motivation reflected in TAT responses.

The first task in devising a method of measuring motivation was to vary the intensity of a human motive and to measure its effects on imagination or fantasy. Just as Hull had experimentally manipulated drive states in animals, (e.g., he increased the hunger drive by depriving animals of food for varying lengths of time), McClelland began by experimentally manipulating strength of food motivation in humans. McClelland obtained TAT stories from groups of Navy men who differed in the number of hours for which they had gone without food. The experiments, performed at the U.S. Submarine Base in New London, Connecticut, showed that different degrees of hunger were reflected in different amounts of food imagery in the TAT stories. In other words, fantasy TAT stories could be used to measure the strength of motivation (Atkinson and McClelland, 1948).

The next step was to choose a uniquely human motive, experimentally vary its intensity and identify the resultant changes in TAT fantasies. McClelland chose to study achievement motivation, one of the most interesting motives previously defined by Henry Murray. The intensity of achievement motivation was varied by giving different instructions to groups of individuals just before they wrote their TAT stories. One group was told that people who did well on the fantasy test were successful businessmen and administrators. It was assumed that these instructions would arouse achievement thoughts. The TAT responses of this group were compared to TAT responses of a group given "neutral" instructions and to a third group who were given "relaxed" instructions. The specific kinds of thoughts which were present in the achievement group TAT's and absent in the "neutral" and "relaxed" set of TAT's became the operational definition of achievement motivation. (McClelland et. al. 1953). Since this definition,

or measure, is so critical to an understanding of the subsequent research, it will be presented in some detail here.

Motives are different patterns of thought associated with different goals. Achievement thoughts are those associated with striving for some kind of excellence, as opposed to the thoughts associated with gaining prestige and influence (power motivation) or the thoughts associated with establishing friendly relationships (affiliation motivation). Thus, a TAT story contains achievement motivation thoughts if, and only if, it includes a stated goal of striving for a standard of excellence. Achievement goal imagery (AI) is reflected in any one of the four following types of AI: competition with others, competition with one's self, striving for some unique accomplishment, and long term involvement. If a TAT story contains a statement of any of these four types of concerns, the story receives one point. The story below contains an example of the "unique accomplishment" type of AI:

> The boss is talking to an employee. The boss wants the employee, an engineer, to start working on a specifically designed carburetor for a revolutionary engine. The job will come off O.K., and the engine will revolutionize the automobile industry.

If AI is present, subcategories then are tallied to reveal the strength of the motive. The phrases and expressions of the story are scrutinized to see whether they fit into the further subcategories of the scoring system, which are summarized below. For each of the subcategories which appears in the story, an additional point is given.

.N. Stated need for achievement: expression of a desire to reach an achievement goal. "He wants very much to solve the problem."

IA Instrumental activity: statement that something is being done about attaining an achievement goal. "The man worked hard to sell more books."

Ga+ Positive anticipatory goal state: stated anticipation of success in attaining a goal. "He hopes to become a great surgeon."

Ga- Negative anticipatory goal state: stated anticipation of failure or frustration. "He thinks he will make a mess of the job."

Bw Environmental block: statement that goal-directed activity is obstructed by something in the external world. "His family couldn't afford to send him to college."

Bp Personal block: statement that progress of goal-directed activity is obstructed by personal deficiences. "He lacked the confidence to oversome his shyness."

Nup Nurturant press: statement of someone's aiding or encouraging the person striving for achievement. "His boss encouraged him in his ambitions."

G+ Positive affective state: stated experience of a positive emotional state associated with a definite accomplishment. "He is proud of his acceptance to graduate school."

G- Negative affective state: stated negative emotion associated with failure to attain an achievement goal. "He is disgusted with himself for his failure."

Ach Th Achievement thema: the major plot or theme of the story is achievement, rather than affiliation or power.

The following is an example of a typical story produced in response to a TAT picture:

> An engineer is trying to answer questions on an exam and is finding the test too difficult to do as well as he had wanted. The student is not stupid, but he has a girl and didn't study as hard as he should have. He is unhappy that he didn't study harder, and hopes he has acceptable answers. He would cheat, but it is an honor exam, and he has too much character. He will get a "D" on the exam and will turn over a new leaf and devote the proper time to study.

Score: AI, IA, Bp, G-, Ga+, Ach Theme = total 6 points.

The preceding, although a necessarily brief account of the scoring system, indicates its nature as an intellectual junction of two customarily separate psychologies, Hullian and Freudian, and summarizes what the concept of n-Ach has come to include.[1]

The existence of this reliable, coded, objective measure of achievement motivation opened the door to a hitherto neglected area of research. In the years following McClelland's seminal research, hundreds of studies were conducted to explore further the nature, relevance, and effects of achievement motivation. Several of these studies had a particularly significant impact on McClelland's subsequent theorizing and research. Researchers discovered that individuals with high achievement motivation tend to act in certain characteristic ways:

1. Such individuals tend to set carefully calculated moderate-risk goals. They do not set extremely high-risk and extremely

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1. For more exhaustive accounts of the development of the coding scheme, and of the vigorous methodological examinations which it has undergone, the reader is referred to chapters 7, 8, 9, 10, 11, Atkinson, 1958; Brown, 1965; Klinger, 1966; Birney, 1959; Kagan & Moss, 1959.

low-risk goals in which their efforts are either doomed to failure or are guaranteed of success. They choose challenging goals where the outcome is most uncertain (McClelland, 1958; Atkinson & Litwin, 1960; McClelland, 1955; Atkinson, et. al., 1960).
2. Individuals with high achievement motivation prefer situations in which they can obtain immediate, concrete feedback to evaluate just how well they are doing (French, 1958; Moss & Kagan, 1961).
3. They prefer situations in which they can take personal responsibility for the outcomes of their efforts. They like to control their own destinies through their own actions, initiative, and innovations (French, 1958; McClelland, et al., 1953, pp.286, 287)..

The pattern which emerges from these action strategies very often is characteristic of men in entrepreneurial positions -- where challenging, calculated risks are encouraged, concrete feedback is available, and self-reliance and initiative are valued. That these action strategies of people with high levels of achievement motivation are characteristic of entrepreneurial types is supported in detail by McClelland (1961, Ch. 6).

A second set of research studies focused on the social origins of achievement motivation. Winterbottom studied the parents of thirty middle-class boys, aged 8 - 10 (as reported in McClelland, et al., 1953, pp.297-304). After determining the strength of n-Ach in these boys, Winterbottom examined the child-rearing practices of the parents. She found that the mothers of boys with high achievement motivation (1) tended to set higher standards for their children, (2) expected independence and mastery behavior to occur at an earlier age than did the mothers of boys with low achievement motivation, and (3) more often were affectively rewarding -- i.e., kissing and hugging were more common rewards. Additional corroboration for this relationship between

child-rearing patterns and levels of children's achievement motivation was obtained in several other studies. Rosen and D'Andrade (1959) studied parents and children in six different American ethnic groups and varying social classes: French-Canadian, Italian, Greek, Negro, Jewish, and "Old American Yankee." Despite complex class differences, Rosen and D'Andrade found that self-reliance training promotes high n-Achievement, provided the training does not reflect generalized authoritarianism or rejection by the parents.

These results were extended in cross-cultural research done by Child, Storm, and Veroff (McClelland, et al., 1953). They reasoned that child-rearing patterns reflected pervasive cultural values. To establish this relationship, Child, et al. collected ethnographic data on child-rearing practices from thirty-three cultures. The measure of cultural values was obtained from an analysis of the folk tales of the thirty-three cultures. Folk tales are told to children during the socialization process. Child, et al. found that cultures in which there was direct training for achievement also had folk tales with high levels of achievement motivation. On the other hand, cultures which are characterized by rigid or restrictive child-rearing practices (punishing children for failure to be obediant and responsible) have folk tales with relatively low levels of achievement motivation. The research by Child, et al. confirms in large part an earlier study by McClelland and Friedman (1952).

These studies describe an important social-psychological pattern. Certain cultural values are reflected in child-rearing practices which foster high achievement motivation in children. Further, high achievement motivation in a child often crystallizes into an entrepreneurial personality and subsequent career as a manager or administrator. It was at this point in the research

that McClelland placed these findings into a larger theoretical context. Weber (1930) had noted the relationship between the pervasiveness of the Protestant ethic and the rise of capitalism. McClelland suggested a social-psychological interpretation for Weber's hypothesis. The Protestant ethic represented a stress upon independence, self-reliance, and hard work -- the achievement values which McClelland had shown to result eventually in entrepreneurial activity. McClelland reasoned further that increases and decreases in these cultural values should herald subsequent increases and decreases in economic activity. Potentially this hypothesis provided a psychological explanation for the economic flourishing and decay of nations throughout history.

The research documenting this interpretation of economic history is presented in great detail in McClelland's book, The Achieving Society. Only two key studies presented in this book will be described here. In the first, McClelland compared the economic productivity in 1950 of all the Catholic and Protestant countries in the temperate zone. The average economic productivity of the twelve Protestant countries was compared to the average economic productivity of the thirteen Catholic countries. The measure used to compare economic productivity was the kilowatt hours of electricity consumed per capita. There was a striking difference in favor of the Protestant countries. In the second key study, McClelland obtained measures of the level of achievement motivation in twenty-two countries both in 1925 and in 1950 by counting the frequency of achievement themes in samples of third and fourth grade readers. Three measures of the gain in economic productivity were obtained for the period 1925 to 1950: (1) change in national income as measured in international units per capita (Clark, C., 1957), (2) change in kilowatt hours per capita of electricity produced, and (3) a combination of the above two measures of change. Levels of achievement motivation

in 1925 and 1950 were correlated with the degree of deviation from the expected economic gains.

Correlations of Reader Achievement Motive Scores with deviations from expected Economic Gains (Courtesy of D. Van Nostrand Co, Inc., The Achieving Society, p.92).

Achievement Motive Level by year	IU/cap 1925-1950 (N=22)	Kwh/cap 1925-1950 (N=22)	Both Combined (N=22)
1925	.25	.53 ($p<.01$)	.46 ($p<.02$)
1950	.03		-.03

This table shows that the level of achievement motivation in 1925 predicts the rate of economic development from 1925 to 1950, while the level of achievement motivation in 1950 does not correlate with the rate of economic productivity. This striking confirmation of McClelland's theory was extended in several subsequent research studies. Levels of achievement motivation were measured in the literature of Spain and England from the 1600's through the 1800's. In both cases, the rise and fall of achievement motivation preceded the rise and fall of economic productivity by about 25 to 50 years. Similar relationships were obtained for achievement motivation levels and economic productivity in Greece from 900 to 100 B.C. and Pre-Incan Peru from about 800 B.C. to 700 A.D. (McClelland, 1961, ch. 4).

As a further critical test of the theory, McClelland made the prediction that if the level of achievement motivation can be increased, there should be a corresponding increase in entrepreneurial activity. In global terms, this means that raising the level of achievement motivation in a whole nation should increase the subsequent rate of economic development. In molecular

terms it means that men with increased motivation should become more active, energetic entrepreneurs. In 1964 a course to develop n-Ach was given to fifty-two businessmen in Kakinada, India. Eighteen months after the courses, 47 per cent of these men had become unusually active in their businesses, compared to 14 per cent in the two years preceding the course. Also, there were no changes in the level of activity in a matched "no treatment" control group, their unusual activity percentage remaining under 20 per cent (Lasker, 1966). In the past several years, several motive development courses have been given to businessmen in Spain, Mexico, and the United States, with roughly similar results (McClelland, 1965).

THEORY AND PURPOSE OF CURRENT RESEARCH

The success of these n-Ach development courses is striking in several respects. The majority of psychoanalysts, developmental psychologists, and personality change researchers hold that personality is formed during the socialization years and is exceptionally difficult to change in important ways later. In fact, much of the previous n-Ach research supports the view that motives are learned early and remain relatively stable thereafter. That the level of achievement motivation can be changed in adults, in a relatively short period of time (a week to ten days), and remain changed for several years is a contradictory, yet optimistic, finding. What began as an attempt to demonstrate the causal relationship between achievement motivation and entrepreneurial activity has raised separate but related questions for investigation: Can motivation be increased in adolescents as well as in adults? What are the most effective methods in increasing motivation? How can the existing research findings, change techniques, and institutional settings be utilized in increasing motivation systematically? These are the questions under investigation in the Achievement Motivation Development Project.

The first step in this latest research was to survey the previous experience in giving n-Ach development courses, as well as the literature on personality change in psychotherapy, guidance, opinion and attitude studies, and education. The results of this exhaustive survey were published in the article "Toward a Theory of Motive Acquisition" (McClelland, 1965). The twelve propositions for increasing motivation described in this article are the basis of the

current research. These propositions may be summarized under four major headings: Goal Setting, Motive Syndrome, Cognitive Supports, and Group Supports.

Goal Setting

In general, the three propositions in this group focus on inducing confidence in, commitment to, and measurement of change in attaining specific goals. Proposition I states that the more reasons the person has in advance about the possibility and desirability of change, the more likely he is to change. This notion has wide support in the psychological literature: the Hawthorne effect (in business), the "Hello-Goodbye" effect (in therapy), "experimenter bias" studies (in experimental psychology), and prestige-suggestion studies (in attitude change), among others, all support the contention that belief in the possibility and desirability of change is influential in changing a person. Among the means used to create this belief in course participants have been the presentation of research findings on the relationship of n-Ach to entrepreneurial success, the suggestive power of membership in an experimental group designed to show an effect and the prestige of a great university. This prestige "pitch" is given before the course proper begins. Later in the course, participants make a public commitment to seeking specific achievement goals. Proposition VIII (numbered as in McClelland's article) states that the more an individual commits himself to achieving specific goals related to the motive, the more the motive is likely to influence his future thought and action. Proposition IX states that motive change is more likely to occur if a person keeps a record of his progress toward his goal. Thus in the course, reinforcement is built into the goal-setting procedure by having course participants establish

methods of measuring just how well they are doing at any given time. This is the kind of regular, concrete feedback which is especially important to people with high achievement motivation.

Motive Syndrome

A motive is a pattern or cluster of goal-directed thoughts typically associated with certain action strategies. Since both thoughts and actions occur in specific, real-life contexts, the motive syndrome is the integration of thoughts, actions, and contexts. Proposition III states that the more an individual clearly conceptualizes the motive to be acquired, the more likely he will be to employ that motive. In the achievement motivation courses, therefore, participants are given the TAT and then taught to score their own stories. In this way, they learn what the achievement motive is, and evaluate just how much of the motive they have upon entering the course. After learning the scoring system, participants are encouraged to use those labels in coding their own thinking in everyday situations. Similarly, participants learn the action strategies of people with high achievement motivation through playing illustrative games, analyzing case studies, and discussing everyday life situations as a group. This portion of the course is based upon two other propositions: IV-The more a person can link the motive to related actions, the more likely it is that the motive will be acquired; and V-The more a person can transfer and apply the newly conceptualized motive to events in his daily life, the more likely the motive will be increased. These propositions derive from animal and educational research on generalization and transfer of training.

Cognitive Supports

The research on attitude and opinion change demonstrates that thoughts and actions can be affected through rational discussion and dialogue. Thus, to increase a particular motive, it is also important to explore rationally how that motive is consistent with the demands of reality (Proposition II), how it will be an improvement in a person's self-image (Proposition VI), and how it is consistent with the dominant cultural values (Proposition VII). The more a person sees these consistencies and possible improvements, the more likely it is that the motive will be increased. In the n-Ach courses, these connections are fostered through (1) an extensive presentation of the research showing the relationship between n-Ach and entrepreneurial success; (2) self-confrontation, and meditation, and individual counselling; and (3) group discussions of n-Ach in relation to the folk lore, religious books, and expressed values of the culture.

Group Supports

Cognitive learning and practice alone are not sufficient to increase motivation. Affective factors are important as well. Thus, the n-Ach courses also encourage change in affect through several different procedures. Typically, the course leaders assume a non-directive, warm, accepting role consistent with the emphasis on warmth and support of client-centered therapists (Proposition X). Although the instructors lead discussions and often present information, in general their role is to support open exploration by course members. The choice of whether or not to employ n-Ach in one's own life is left to the participants.

In addition, this emotional, personal confrontation is encouraged by giving the course in "retreat" settings

which dramatize the importance of self-study (Proposition XI). Last, emotional group supports are fostered by encouraging the group members to continue group activities. In this way, the ideas and feelings are kept salient through the new reference group after the course has ended (Proposition XII).

Having specified the major variables assumed to influence the acquisition of motives, the research is designed to systematically add and subtract these hypothesized variables in a series of motive-arousal courses. Results of the courses are to be collected for one- to two-year periods following the courses in order to assess the differential impact of these twelve factors.

ACHIEVEMENT MOTIVATION IN ADOLESCENTS AND HIGH SCHOOLS

With the increasing demands for higher educational degrees to qualify for prestigious jobs, there has been a corresponding increase in the importance of academic success. Secondary schools typically give greatest and most significant rewards to those who demonstrate academic excellence. Academic success sometimes is the standard of excellence for which students with high achievement motivation strive. Very often, however, achievement motivation is reflected in striving for other valuable, though less prestigious, goals. Often, in fact, students with high achievement motivation do not do particularly well academically. Their lack of success may be due to several structural aspects of schooling. Most high school curricula do not encourage individual students to take personal responsibility for setting their own moderate-risk goals. Standards fo excellence are set and measured by teachers, not by students. For the lower half of every class, getting an "A" is a very high-risk goal. Yet striving for a moderate-risk "C" does not yield the payoff so important to later success. It is not surprising that some students with high achievement motivation find school to be at odds with their motivation. Their initiative, independence, and self-reliance either is not seen by teachers because it is demonstrated outside of school, or it is seen by teachers as "rebellious," "anti-social" activity. Categorized as "problem students," "slow learners" or "potential dropouts," these students, not surprisingly,

may develop negative self-images and a distaste for schools. This attitude results in increased rebelliousness and a sense that they have little power to control their environment and their lives. Their achievement motivation is decreased or remains latent within the schools.

Although this clinical picture may not be characteristic of the majority of adolescents, it does describe a significant group, and it is these students for whom the achievement motivation courses are intended. The practical goal of the research is not simply to re-engage disenchanted adolescents in the struggle for high grades. Rather, it is the hope that the achievement motivation of youths who have begun to opt out of the system can be raised and directed to any goals which are meaningful to them and valuable to scoiety.

STATUS OF MOTIVE ACQUISITION RESEARCH

The initial research on motive acquisition in adolescents was conducted by David Kolb in 1961. Kolb gave an n-Ach course to twenty intellectually competent, but underachieving, high school students enrolled in a summer enrichment program at Brown University (Kolb, 1965). The experimental group and a matched control group of thirty-seven boys, who were enrolled in the same summer program, were studied for one and a half years after the course. For both groups, grades improved in the first semester following the course. In the next year, however, the grades of the boys in the control group returned to their pre-program level, as did the grades of the lower-class boys in the n-Ach course. But the grades of the middle-class boys in the course continued to improve.

These provocative findings and the techniques, games, and procedures developed by Kolb were the starting points for the research operation sponsored by the R & D center. In the summer of 1965, Dr. Joel Aronoff began a diagnostic study of lower and working-class boys in Jamaica Plain, Massachusetts, in order to better understand some of the possible cultural factors responsible for the failure of Kolb's work with the lower-class boys (Aronoff, et al., 1965). On the basis of this information, Kolb's procedures have been revised and new course inputs created. At present, the Achievement Motivation Development Project staff is continuing to develop appropriate case studies, programmed text materials, teacher manuals, new games, and exercises for the motivation courses. Eventually these materials will constitute an instrumented curriculum available to the public for increasing n-Ach in adolescents. In addition to developing materials, the AMDP staff has conducted three n-Ach courses to train teachers.

In these ways, n-Ach courses will not depend on the continued existence of AMDP after 1970, the terminal year of the research sponsored by the R & D center.

In the spring of 1966, two residential n-Ach courses were given to twenty-one Arlington High School juniors. These students were among a group of fifty-six students identified by school personnel as the "most difficult" students in school. Most of the students were potential drop-outs and had a long history of discipline problems. Interestingly, many of their characteristic behavior patterns were demonstrated during the residential course, to the dismay of the Harvard psychologists who were less able to control the students than the Arlington High School teachers. Given this unfavorable immediate feedback, the results available now, a year later, are particularly surprising.

1. Only one student in the experimental group of twenty-one has dropped out of school. Eight of the matched control group of thirty-six have dropped out of school.

2. The average grades of the experimental group have gone up about one half a letter grade ($p < .02$). The grades of the experimental group increased in spite of the fact that they tend to be taking more difficult courses than before. No equivalent change in the level of aspiration is reflected in the course choices of the control group.

3. In discussing their current activities, most of the boys who took the n-Ach course state new-found personal interests which have led them into their current activities. In contrast, almost none of the boys in the control group attribute new activities to their own motives. Instead, they cite the influence and pressure of others as reasons. They appear to reflect continued lack of internal motivation in contrast to the n-Ach boys who show a new sense of autonomy and control over their own lives.

In the summer of 1966, four motive-acquisition courses were given to adolescents, aged nine to fifteen, in the Cambridge Friends School. The purpose of this study was to assess the differential impact of increasing motivation (a) through teaching n-Ach action strategies and (b) through teaching the n-Ach thought pattern. The comparison groups consisted of a group of boys who were taught both action and cognitive characteristics of n-Ach and a group who were taught affiliation motivation. This design focuses on the widely held belief that experienced-based learning is more effective than purely cognitive learning in young adolescents.

To illustrate some of the ways the n-Ach courses have been adapted for adolescents, these four courses are briefly described below:

Group I (Action) This group was taught, through action games and role plays, how people with high need for achievement behave (i.e., moderate risk-taking, use of feedback, preference for personal responsibility, taking initiative). One example of this type of training is the racing-car game. The game consists of a miniature racetrack around which toy cars are electrically driven. Two students, each able to control the speed of his own car, compete against each other and against the clock. The car which completes the track in the least time wins. If the "driver" goes too fast, his car falls off the track and is penalized or disqualified. If he goes too slowly, he cannot win. The boys discovered that a moderate speed most often led to success. This moderate risk strategy, like the other action strategies, was generalized through role play situations and demonstrations by a karate expert and a local college football hero.

Group II (Thought) This group learned the n-Ach scoring system and practiced thinking n-Ach thoughts. The principal vehicle of instruction was a specially designed text which the students worked on at their own pace. The ideas were generalized through discussion of case studies and lectures by the karate expert and football hero.

Group III (Combination) Both the action strategies and the thoughts of people with high n-Ach were taught through inputs selected from the "thought" and "action" groups.

Group IV (Affiliation) Achievement motivation was not taught in this group. Instead, the focus in games, role plays, and discussions was on how to "get along with others," and the nature of friendship.

In each group of twelve to fourteen boys, these ideas were conveyed in five ninety-minute sessions once a week. The groups met an additional one and a half hours each week to work on what were called "personal-growth projects." Similar self-change projects, which had been a part of the adult courses, were adapted for this younger age group. For example, the adult courses started with a "Who am I? Why am I here?" discussion. To get the boys to discuss similar self-concept ideas, the instructors asked the boys to name their favorite animals, and the persons they admired most and least. Then discussions focused on comparing the way the boys saw these figures to the way they saw themselves. In addition, toward the end of the course, the boys chose a specific goal for themselves and were encouraged to keep records of their progress towards it. These goals could be of any nature the boys chose -- for example: "to increase the number of pages I read each day about electronics," "to make at least fifty baskets a day in fewer and fewer throws," "to decrease the number of times I lose my temper," "to reduce the number of times I quit things."

These projects gave the boys a chance to apply the ideas and strategies they learned in the other parts of the course.

Follow-up data is being collected on these boys at present, and the results will be published in the near future.

These same research hypotheses now are being tested in Arlington High School with older boys and girls. An older group was chosen in order to evaluate the Piagetian notion that during the formal operational stage (from approximately age fourteen on) purely cognitive learning is more feasible and effective than teaching through concrete actions.

AN EMERGING TREND

Although AMDP research is still in its early phases, one trend exists with sufficient clarity to be reported here. The motive-acquisition courses constitute a new approach to personality change. The goal of the courses is psychological, to increase achievement motivation. The methods employed, however, are basically educational: the courses are taught in classrooms by teachers who use the full range of educational techniques and paraphenalia. This is in contrast to traditional educational psychology which attempts to foster academic growth by applying psychological principles and methods. This new approach has been called "Psychological Education" (Alschuler, 1967).

At the present time, the most well developed psychological education course is the achievement motivation training program. The role of the psychological educator is now being expanded in several ways. The project staff is creating other motive-acquisition courses to increase affiliation motivation and power motivation. In addition, courses are being offered at the Harvard Graduate School of Education which train teachers and guidance counselors as psychological educators. As part of these graduate school courses, students are developing additional psychological education courses to increase other specific aspects of positive psychological functioning. On the basis of present plans and student work, it is possible to anticipate some of the courses which may emerge in the next few years: a self-esteem course for adolescent isolates, a value-orientation course for the aged to help them attain a sense of integrity as they face inevitable death, a concrete operations course for preschoolers to help promote reading and mathematics readiness, a generativity course for underemployed adults. Psychological education courses may

be given in programs for the Peace Corps, Vista, Upward Bound, the Job Corps, and perhaps in mental hospitals as well. These courses will help to bridge the artificial separation between academic teaching and therapy-guidance. They will foster practical ways of breaking out of the present narrow concern of education as taking place only in schools, and in children and adolescents. And such courses may provide a more effective, efficient means of developing human resources.

Although the range of existing options available to psychological educators is limited at present, the possibilities mentioned above are near realization. The Achievement Motivation Development Project will continue to engage actively in their creation. It is hoped that psychological education eventually will make a contribution to the field of personality change equivalent to McClelland's earlier contribution to the understanding of economic history.

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